

## SECTION 2. MAINTENANCE

### 2-1. INTRODUCTION

This section provides procedures for the checkout and replacement of the various parts used within the blast chiller/freezer. Before replacing any parts, refer to the Troubleshooting Section. It will aid you in determining the cause of the malfunction.

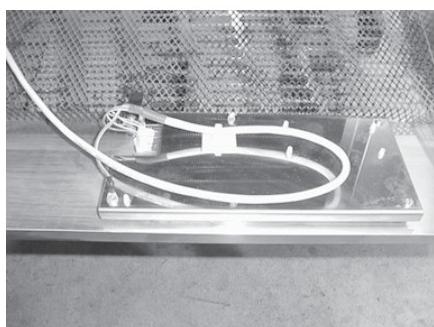
### 2-2. MAINTENANCE HINTS

1. You may want to use a multimeter to check the electric components.
2. When the manual refers to the circuit being closed, the multimeter should read zero unless otherwise noted.
3. When the manual refers to the circuit being open, the multimeter reads infinity.

### 2-3. COMPRESSOR, DRIER, EXPANSION VALVE, SIGHT GLASS, AND CONDENSER FAN

These parts involve manipulating the refrigerant in the system. Any removal or adjustments to these parts must be handled by a certified refrigeration expert.

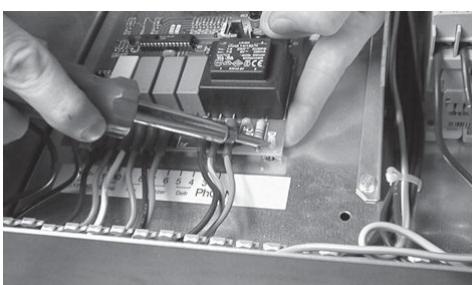
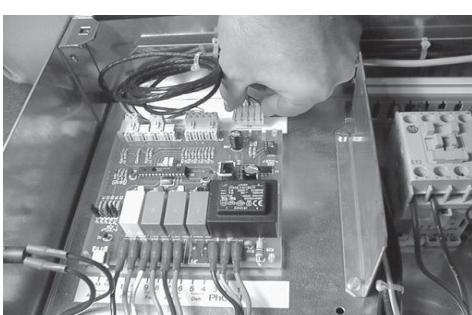
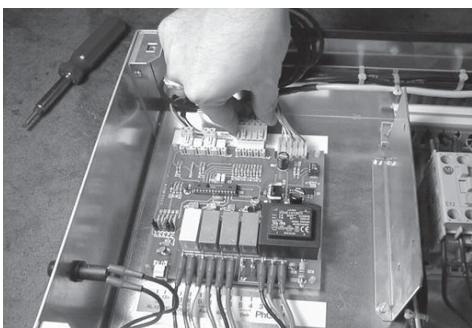
### 2-4. DISPLAY BOARD AND AUXILIARY DISPLAY BOARD



To avoid electrical shock or property damage, move the power switch to OFF and disconnect main circuit breaker, or unplug cord at wall receptacle.

1. Remove the electrical power to the unit.
2. Using a Phillips head screwdriver, remove the two screws securing the front panel, and lower the panel.
3. Pull the connector from the corner of the display board.
4. Using a flathead screwdriver, remove the screws securing the bracket to the panel, and pull the bracket from the panel.
5. Using a flathead screwdriver, push in on the clips on the plastic studs and pull the studs through the bracket. Remove the display board from the bracket.
6. Install the new board in reverse order.

## **2-5. CONTROL BOARD**



1. Remove the electrical power to the unit.



**To avoid electrical shock or property damage, move the power switch to OFF and disconnect main circuit breaker, or unplug cord at wall receptacle.**

2. Using a Phillips head screwdriver, remove the two screws securing the front panel, and lower the panel.
3. Remove the two bolts (under unit) securing the control box.
4. Pull the box from the front of the unit.
5. Remove the four screws securing the control box top and pull the top from the box.
6. Pull the connectors from the control board.
7. Label and pull the wires from the control board.
8. Using a flathead screwdriver, push in on the clips on the plastic studs and pull the studs through the bracket. Remove the control board from the box.
9. Install the new board in reverse order.

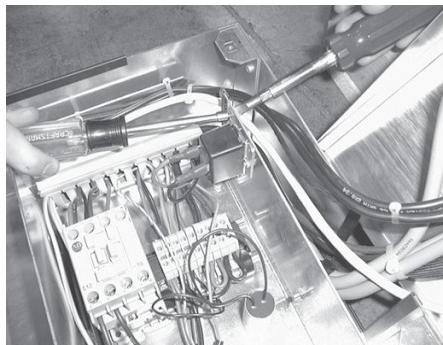
## **2-6. BUZZER**

1. Remove the electrical power to the unit.



**To avoid electrical shock or property damage, move the power switch to OFF and disconnect main circuit breaker, or unplug cord at wall receptacle.**

2. Using a Phillips head screwdriver, remove the two screws securing the front panel, and lower the panel.
3. Remove the two bolts (under unit) securing the control box.
4. Pull the box from the front of the unit.
5. Remove the four screws securing the control box top and pull the top from the box.
6. Label and remove the wires to the buzzer.
7. Remove the two screws securing the buzzer to the bracket and remove the buzzer from the bracket.
8. Install new buzzer in reverse order.

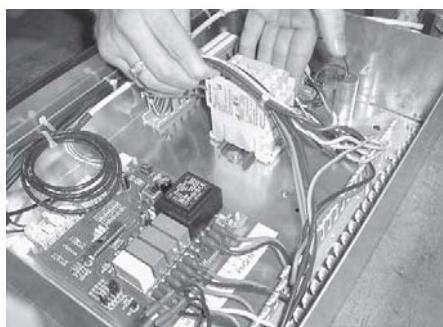


## **2-7. CONTACTOR**

1. Remove the electrical power to the unit.



**To avoid electrical shock or property damage, move the power switch to OFF and disconnect main circuit breaker, or unplug cord at wall receptacle.**



2. Follow steps 2 through 5 in the Control Board Section.
3. Using a flathead screwdriver, remove the two screws securing the bracket to the box, and remove the bracket.
4. Label and remove the wires from the contactor.
5. Slide the contactor off the retainer.
6. Install new contactor in reverse order.

## 2-8. DOOR FRAME HEATER



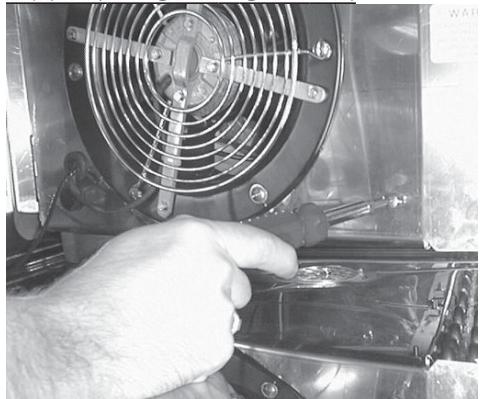
1. Remove the electrical power to the unit.



To avoid electrical shock or property damage, move the power switch to OFF and disconnect main circuit breaker, or unplug cord at wall receptacle.

2. Remove the door to the unit by removing the screws in the lower hinge of the door.
3. Remove the control box from the unit, following steps 2 through 5 in the Control Board Section.
3. Remove the plastic tabs that secures the decorator covers around the door opening, and remove the covers.
4. Peel the heater out of the groove and disconnect the wires (inside control box) to the element, and remove the element from the unit.
5. Install new heater in reverse order and press the plastic tabs in place to secure the decorator covers (tabs included with new heater).

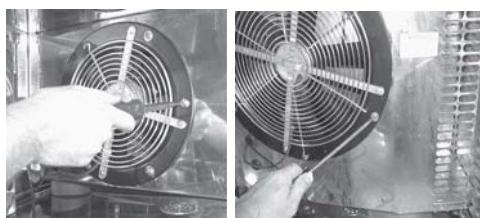
## 2-9. EVAPORATOR FAN



1. Remove the electrical power to the unit.

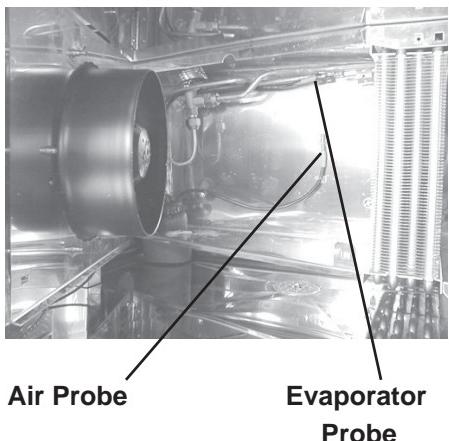


To avoid electrical shock or property damage, move the power switch to OFF and disconnect main circuit breaker, or unplug cord at wall receptacle.



2. Using a Phillips head screwdriver, remove the two screws securing the fan shroud, and pull out on the shroud.
3. Using a Phillips head screwdriver, remove the three screws securing the fan guard, and remove the guard.
4. Remove the control box from the unit, following steps 2 through 5 in the Control Board Section.
5. Disconnect the wires (inside control box) to the fan.
6. Remove the three screws securing the fan to the evaporator door, and pull the fan from the unit.
7. Install new fan in reverse order.

## 2-10. AIR PROBE AND EVAPORATOR PROBE



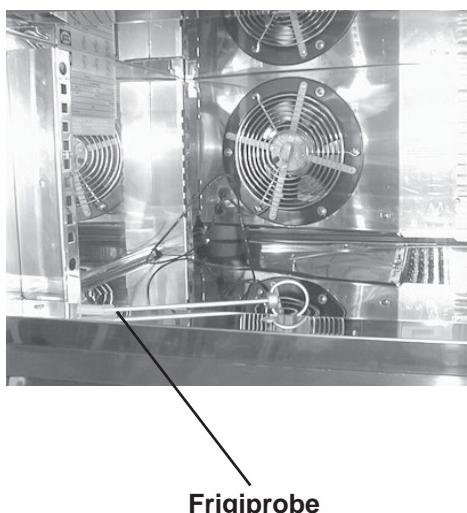
1. Remove the electrical power to the unit.



To avoid electrical shock or property damage, move the power switch to OFF and disconnect main circuit breaker, or unplug cord at wall receptacle.

2. Using a Phillips head screwdriver, remove the two screws securing the evaporator door, and pull out on the door.
3. Remove the appropriate probe from the bracket. (See photo at left).
4. Remove the control box from the unit, following steps 2 through 5 in the Control Board Section.
5. Find the appropriate wires to the PC board and remove the wires from the board.
6. Pull the probe wire through the wiring harness.
7. Install new probe in reverse order.

## 2-11. FRIGIPROBE



1. Remove the electrical power to the unit.



To avoid electrical shock or property damage, move the power switch to OFF and disconnect main circuit breaker, or unplug cord at wall receptacle.

2. Using a Phillips head screwdriver, remove the two screws securing the evaporator door, and pull out on the door.
3. Remove the control box from the unit, following steps 2 through 5 in the Control Board Section.
4. Find the appropriate wires to the PC board and remove the wires from the board.
5. Pull the probe wire through the wiring harness.
6. Install new probe in reverse order.

## 2-12. FUSE AND FUSE HOLDER

If the unit has no power, the fuse may be blown. To access the fuse:

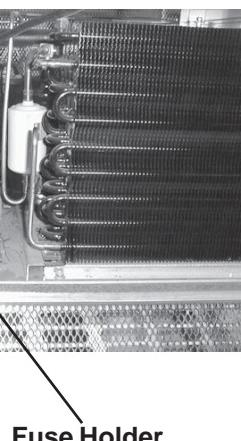
1. Remove the electrical power to the unit.



**To avoid electrical shock or property damage, move the power switch to OFF and disconnect main circuit breaker, or unplug cord at wall receptacle.**

2. Remove the two screws securing the front panel and pull down the panel.
3. Unscrew the fuse cap and pull the 10 amp fuse from the holder.

To check and replace the fuse holder:



1. Remove the two screws securing the front panel and pull down the panel.
  2. Remove the two bolts securing the control box and pull the control box from the unit. (See Control Board Section.)
  3. Remove the four screws securing box top and remove the top.
  4. Remove the wires from the fuse holder and check for continuity across the terminals. The circuit should show closed. If open, replace fuse holder.
  5. Reinstall the control box and front panel, and unit is now ready for use.
1. Remove electrical power to unit and allow evaporator to cool.



**To avoid electrical shock or property damage, move the power switch to OFF and disconnect main circuit breaker, or unplug cord at wall receptacle.**

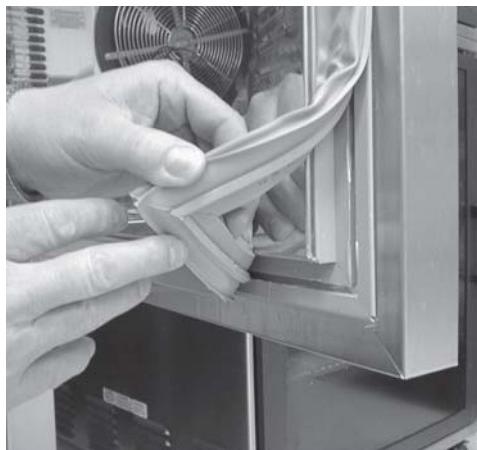
**Also, if evaporator is functional, it will be very hot! Allow evaporator to cool before removing, or burns could result.**

**2-13. CONDENSATION  
EVAPORATOR (Continued)**



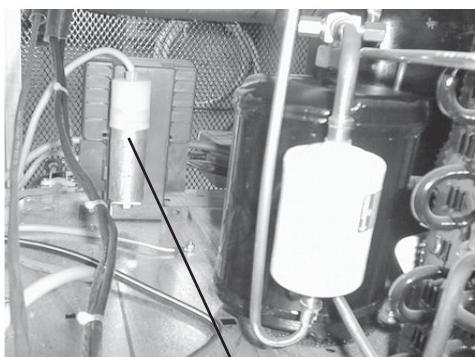
2. Bend out the clips securing the rodent cover on the back of the unit, and pull the cover down.
3. Disconnect the wires to the evaporator.
4. Pull up on the bottom of the evaporator to disengage the evaporator from the bracket. The evaporator is snapped into place. No hardware is securing it.
5. Replace evaporator in reverse order.

**2-14. DOOR SEAL**

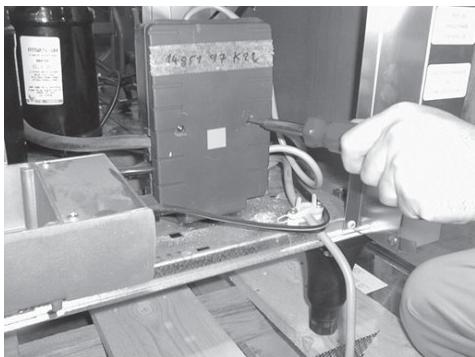


1. Open door and pull out on a corner of the seal until seal clears the retainer.
2. Continue around the door, pulling the seal from the door.
3. Install new seal, starting with the four corners first.

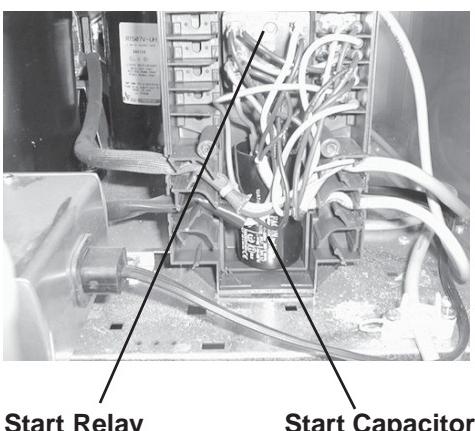
## 2-15. RUN CAPACITOR



Run Capacitor



## 2-16. START CAPACITOR AND START RELAY



Start Relay

Start Capacitor

1. Remove the electrical power to the unit.



To avoid electrical shock or property damage, move the power switch to OFF and disconnect main circuit breaker, or unplug cord at wall receptacle.

2. Remove the two screws securing the front panel and pull down the panel.
3. Bend out the clips securing the rodent cover on the back of the unit, and pull the cover down.
4. Using a Phillips head screwdriver, remove the two screws securing the cover of the junction box, and remove the cover.
5. Disconnect the wires from the relay to the capacitor.
6. Remove the capacitor from the unit, from the front.
7. Install new capacitor in reverse order.

1. Remove the electrical power to the unit.



To avoid electrical shock or property damage, move the power switch to OFF and disconnect main circuit breaker, or unplug cord at wall receptacle.

2. Bend out the clips securing the rodent cover on the back of the unit, and pull the cover down.
3. Using a Phillips head screwdriver, remove the two screws securing the cover of the junction box, and remove the cover. (See section 2-12 above).
4. Disconnect the wires to either the relay or the capacitor, and remove component from the unit.
5. Install new component in reverse order.

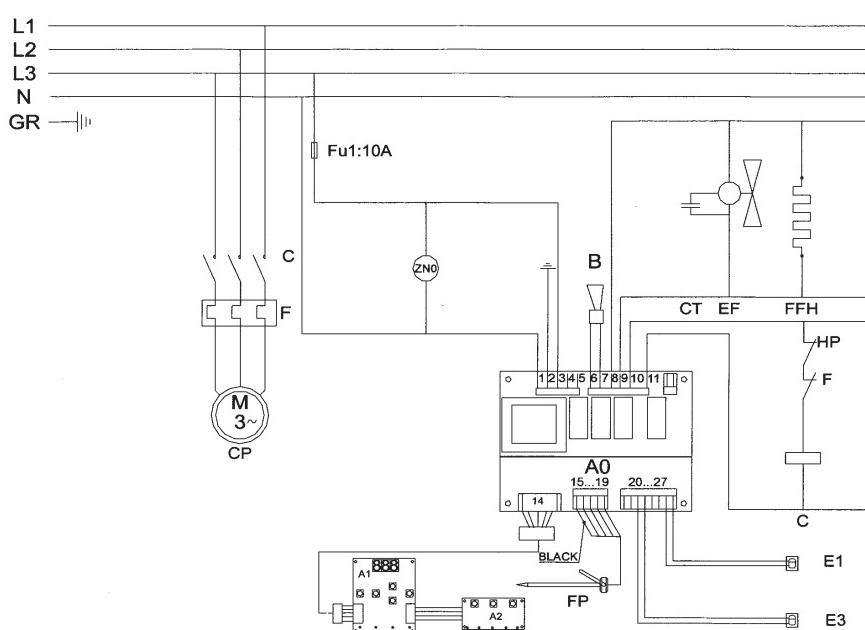
**2-17. PREVENTIVE MAINTENANCE**

As in all food equipment, the Henny Penny Blast Chiller/Freezer does require care and proper maintenance. The table below provides a summary of scheduled maintenance.

<b>Procedure</b>	<b>Frequency</b>
Clean all surfaces with a soft cloth, soap and water; <u>do not</u> use abrasives	Daily
De-ice the evaporator	Daily
Clean the condenser of dust and obstructions	Monthly

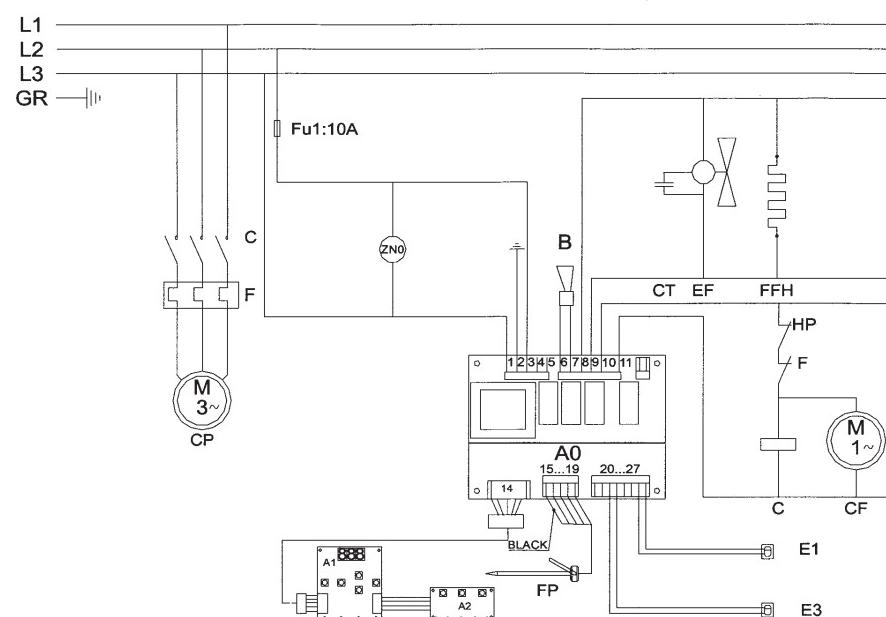
## Wiring Diagrams BCF/BCM-110

Mark	Designation
Fu1	Fuse
ZNO	Varistor
A0	Control board
A1	Display board
A2	Auxiliary display board
B	Buzzer
C	Contactor
CP	Compressor
CT	Capacitor
E1	Air probe
E3	Evaporator probe
EF	Evaporator fan
F	Thermal overload relay
FFH	Front frame heater
FP	Frigiprobe
HP	High pressure controller
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400V /50Hz/3+N+GR

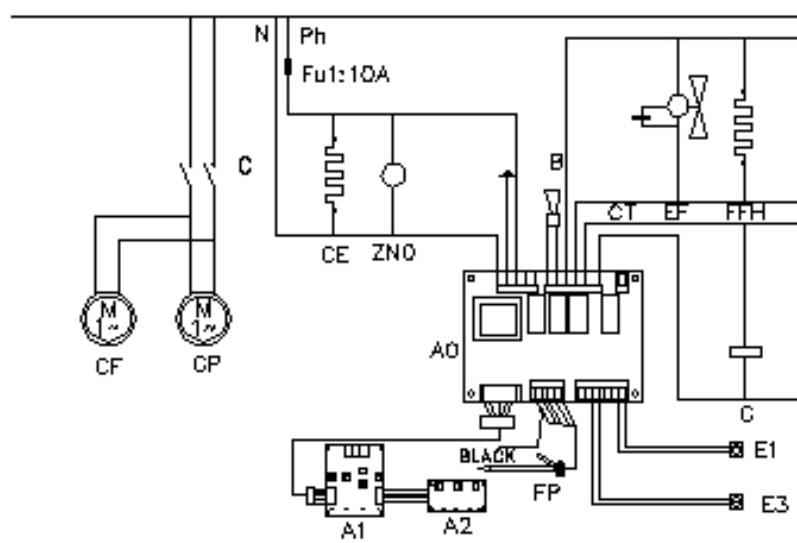
Mark	Designation
Fu1	Fuse
ZNO	Varistor
A0	Control board
A1	Display board
A2	Auxiliary display board
B	Buzzer
C	Contactor
CF	Compressor fan
CP	Compressor
CT	Capacitor
E1	Air probe
E3	Evaporator probe
EF	Evaporator fan
F	Thermal overload relay
FFH	Front frame heater
FP	Frigiprobe
HP	High pressure controller



208-240V/60Hz/3+GR

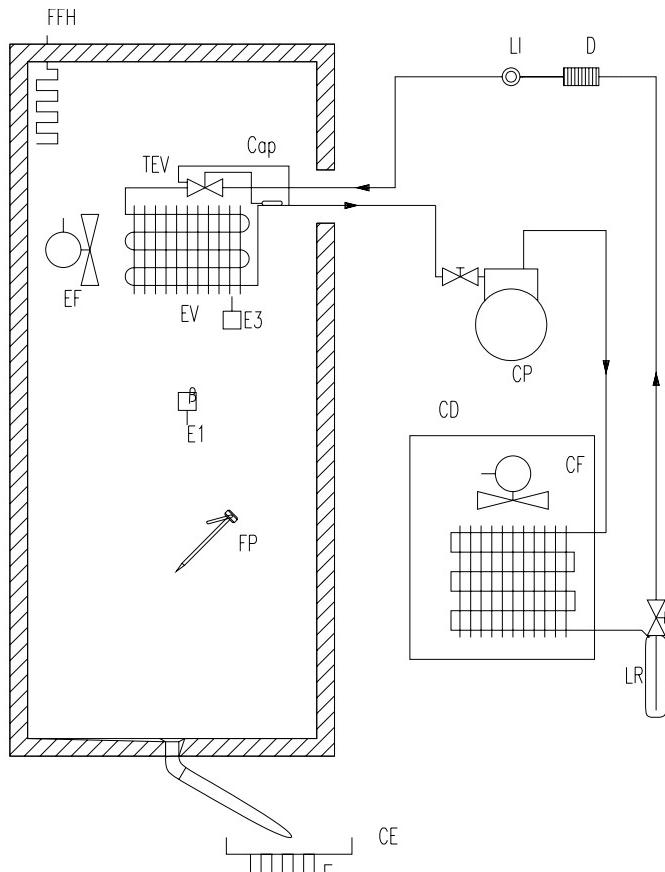
## Wiring Diagram BCF-24/65

Mark	Designation
Fu1	Fuse
ZNO	Vorfasator
A0	Control board
A1	Display board
A2	Auxilliary display board
B	Buzzer
C	Contactor
CE	Condensate evaporator
CF	Condenser fan
CP	Compressor
CT	Capacitor
E1	Air probe
E3	Evaporator probe
EF	Evaporator fan
FFH	Front frame heater
FP	Frigiprobe

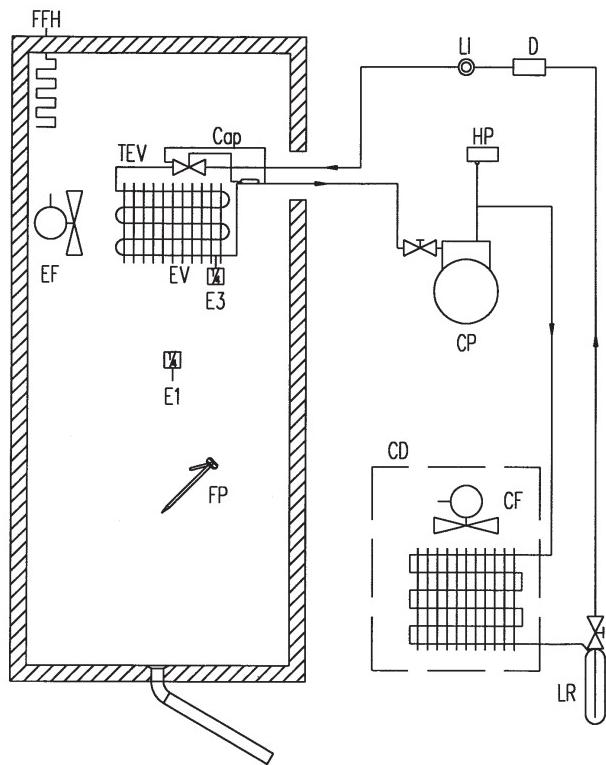


## Refrigeration Diagram BCF-24/65

Mark	Designation
Cap	Capillary (not in BCF-24)
CD	Condenser without motor
CE	Condensate evaporator
CF	Condenser fan
CP	Compressor
D	Drier
EF	Evaporator fan
E1	Air probe
E3	Evaporator probe
EV	Evaporator
FFH	Front frame heater
FP	Frigiprobe
LI	Liquide indicator
LR	Liquide receiver
TEV	Thermostatique expansion valve

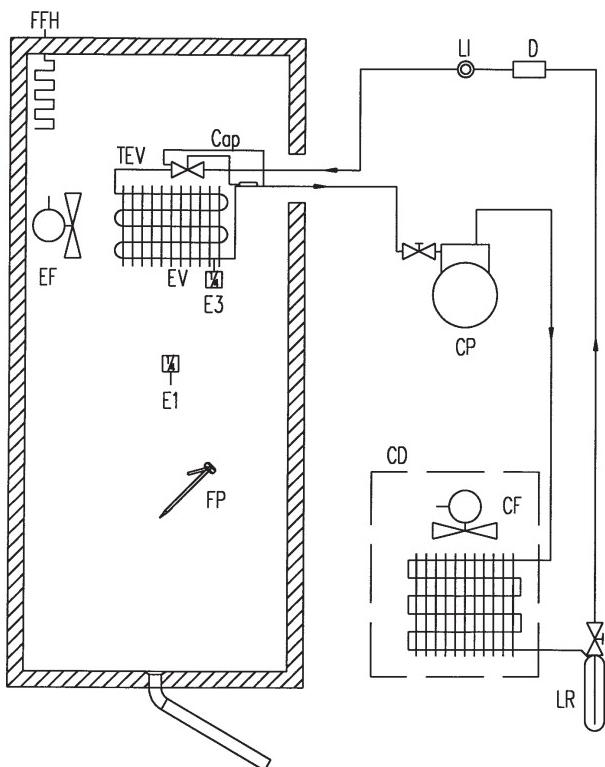


### Refrigeration Diagram BCF/BCM-110-UL



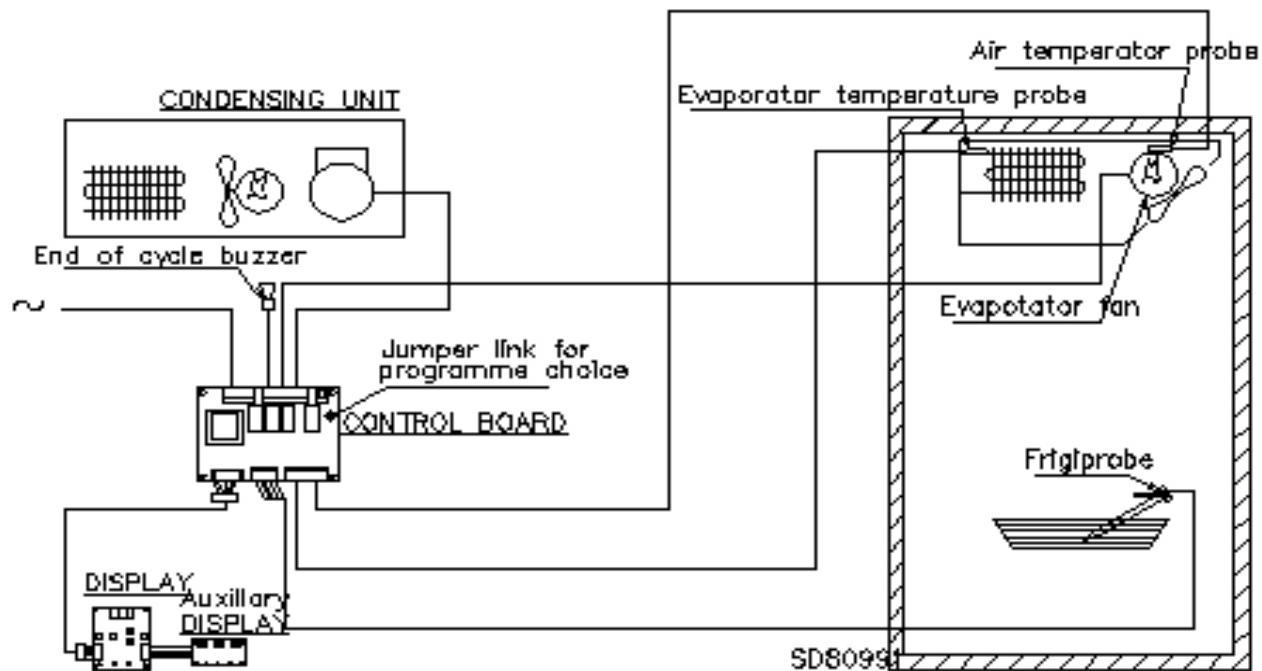
Mark	Designation
Cap	Capillary
CD	Condenser
CP	Compressor
D	Drier
EF	Evaporator fan
E1	Air probe
E3	Evaporator probe
EV	Evaporator
FFH	Front frame heater
FP	Frigiprobe
LI	Liquide indicator
LR	Liquide receiver
TEV	Thermostatique expansion valve
HP	High pressure switch
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### Refrigeration Diagram BCF/BCM-110-Int'l.

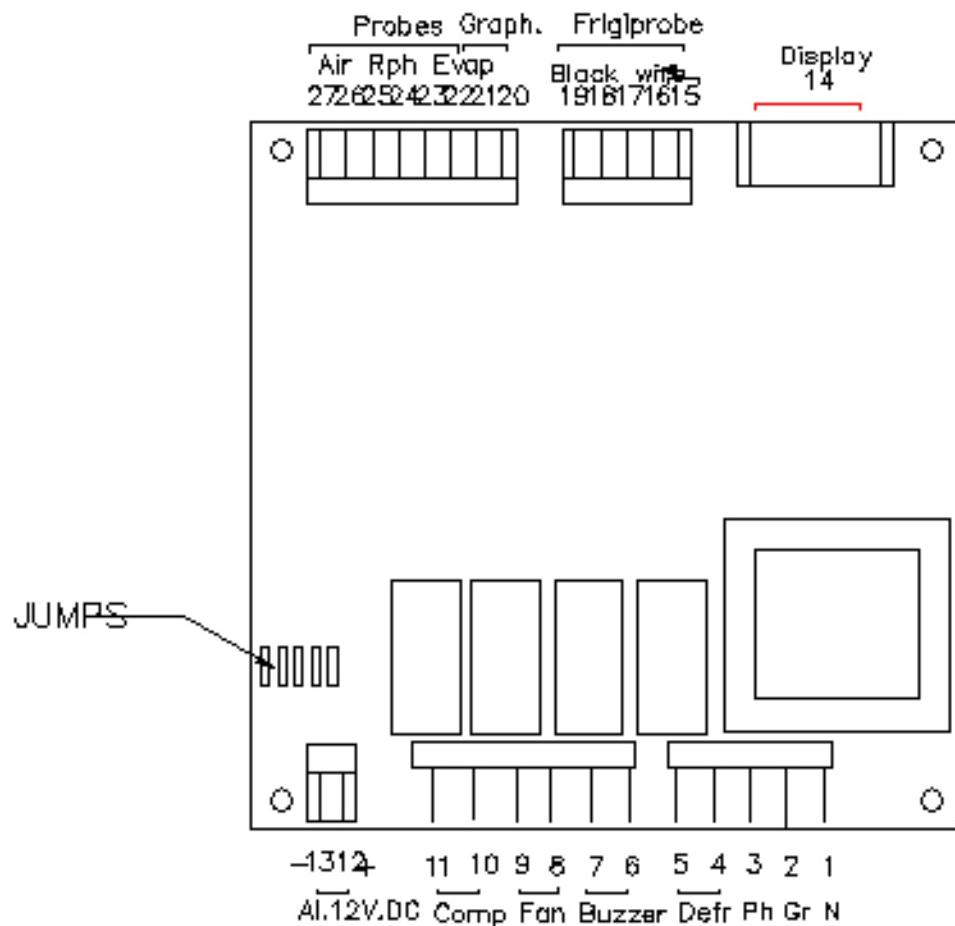


Mark	Designation
Cap	Capillary
CD	Condenser
CP	Compressor
D	Drier
EF	Evaporator fan
E1	Air probe
E3	Evaporator probe
EV	Evaporator
FFH	Front frame heater
FP	Frigiprobe
LI	Liquide indicator
LR	Liquide receiver
TEV	Thermostatique expansion valve
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## Electrical/Refrigeration Diagram



## Wiring Information of PC Board



- 1-3 POWER SUPPLY
- 2 COMPULSORY EARTHING CONNECTION
- 4-5 POWER SUPPLY OUTPUT FOR ELECTRIC HEATING ELEMENT FOR DE-ICING OF THE EVAPORATOR (NOT USED)
- 6-7 POWER SUPPLY OUTPUT FOR BUZZER SIGNAL
- 8-9 POWER SUPPLY OUTPUT TO FAN(S) AND FRONT FRAME HEATER (ANTI-FOGGING)
- 10-11 POWER SUPPLY OUTPUT TO COMPRESSOR UNIT
- 12-13 12VDC OUTPUT TO ALARM BUZZER (NOT USED)
- 14 DISPLAY INPUTS
- 15-19 FRIGIPROBE INPUTS (BLACK WIRE TO 15, WIRING UNIMPORTANT FOR OTHER COLORS)
- 20-21 0 TO 1 VOLT OUTPUT TO GRAPHIC RECORDER : (HOTTEST FRIGIPROBE TEMPERATURE, NOT USED)
- 22-23 EVAPORATOR TEMPERATURE PROBE INPUTS
- 24-25 PHOTO-ELECTRIC RESISTOR INPUTS (NOT USED)
- 26-27 AIR TEMPERATURE PROBE INPUTS